Tighe&Bond

Engineers | Environmental Specialists

SEWER FEASIBILITY STUDY

Town of Pine Plains

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Tighe&Bond

PROJECT SCOPE

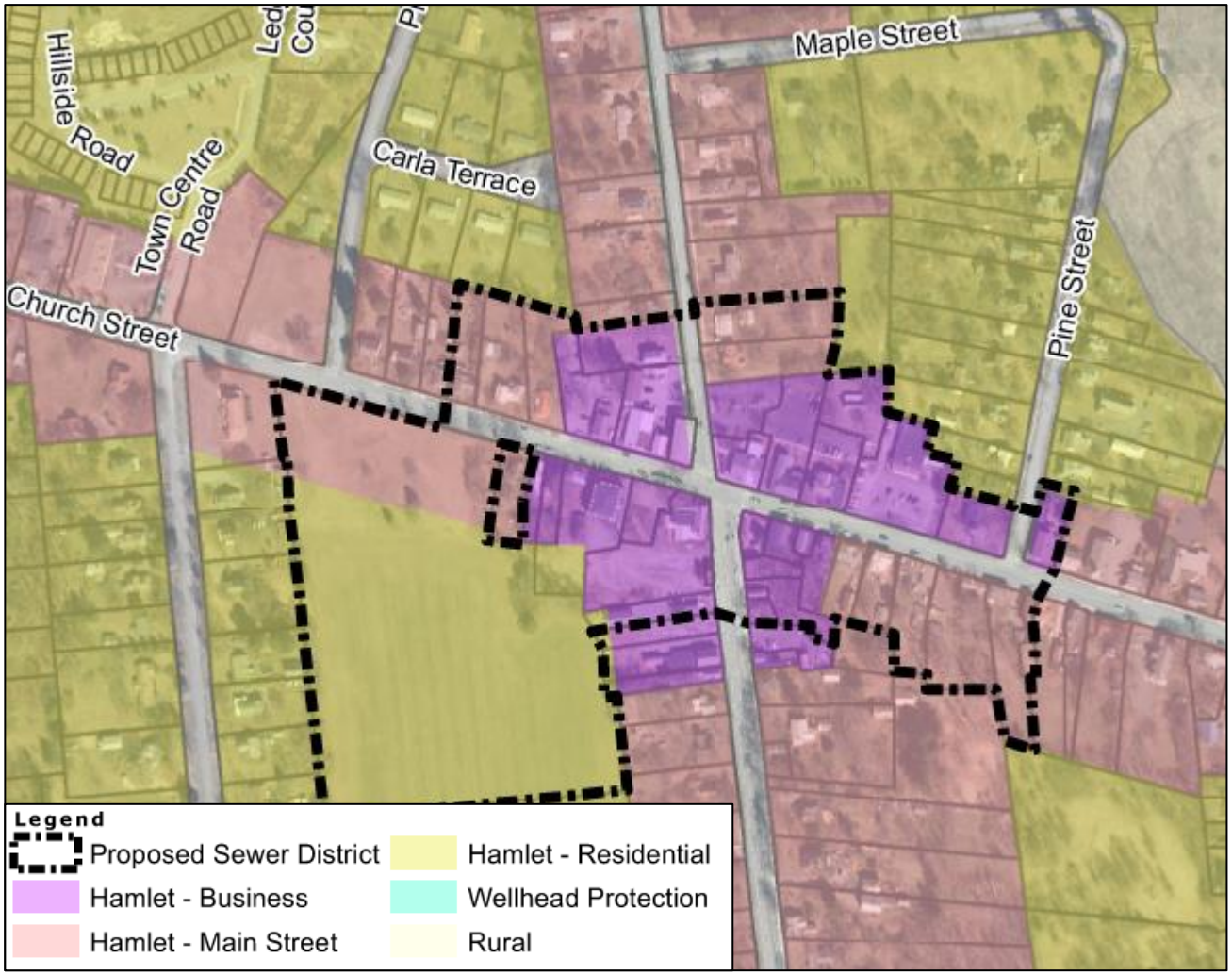
- **Identify Need for Sewer System**
- **If Needed – Recommend Approach**
- **Scope of Work:**
  - Task 1: Sewer District Needs Analysis & Delineation
  - Task 2: Wastewater Flow Development
  - Task 3: Collection & Treatment System Layout
  - Task 4: Reports & Opinion of Probable Costs

PROJECT QUESTIONS

- **Why complete this study?**
  - Maintain a healthy vibrant community
  - Increase foot traffic
  - Attract other businesses and residents
  - Improve quality of life
  - Allow for full capacity of businesses
- **Why us?**
  - The Town is not alone – Village & Town of Red Hook, Village of Millerton, Town of Amenia, Town of Copake, Town of Pound Ridge – all looking at community wastewater
- **Why now?**
  - Water Infrastructure Improvement Act Grants
  - Infrastructure Bill
- **Why are we here?**
  - Review results of study with community

TASK 1: SEWER DISTRICT NEEDS ANALYSIS & DELINEATION

- **Proposed Sewer District**



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TASK 1: SEWER DISTRICT NEEDS ANALYSIS & DELINEATION

- **Other Considerations**
  - Smallest parcels are in the Hamlet Center
  - Supports comprehensive plan goals

- **Recommendations**
  - Proposed district should serve the Hamlet-Business Zoning area
  - Include nearby parcels that would like to connect
  - Include nearby parcels with septic system issues
  - Exclude those who do not want to connect

TASK 2: WASTEWATER FLOW DEVELOPMENT

- **Flow Estimates**
  - Based on historical water meter data
  - Flow estimate for proposed district = **13,500 gallons per day**
  - Future flow estimates = **20,000 gallons per day**

Task 1: Sewer District Needs Analysis & Delineation

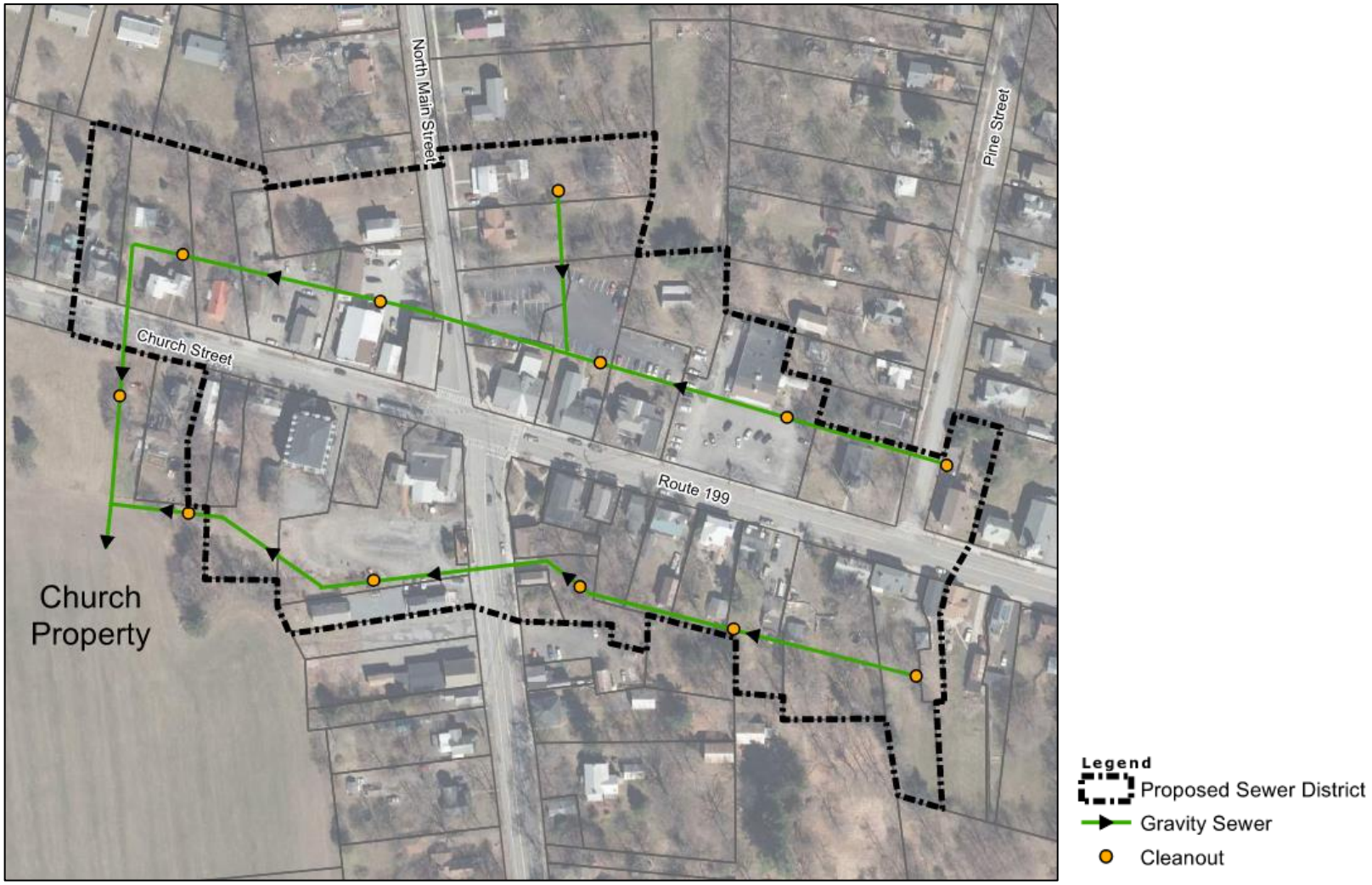
Task 2: Wastewater Flow Development

Task 3: Collection & Treatment System Layout

Task 4: Reports & OPC

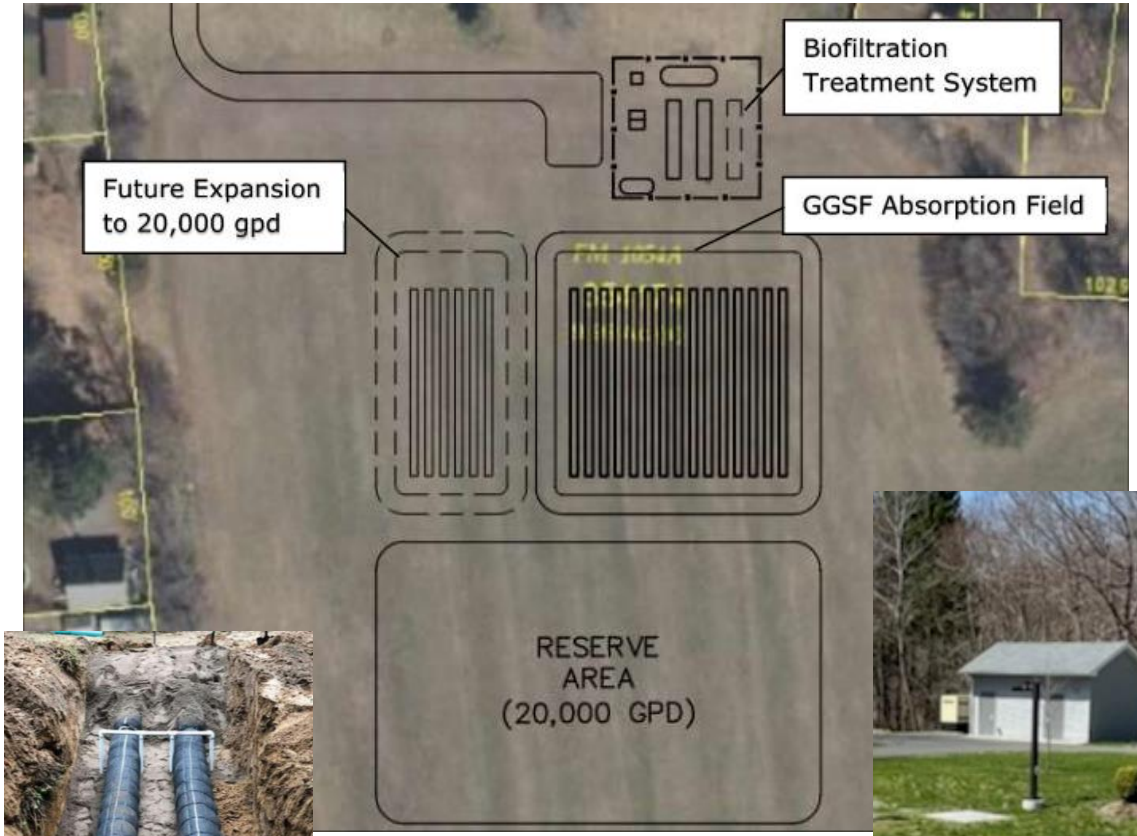
TASK 3: COLLECTION & TREATMENT SYSTEM LAYOUT

- **Preliminary Collection System**
  - Septic Tank Effluent Gravity (STEG) Collection System



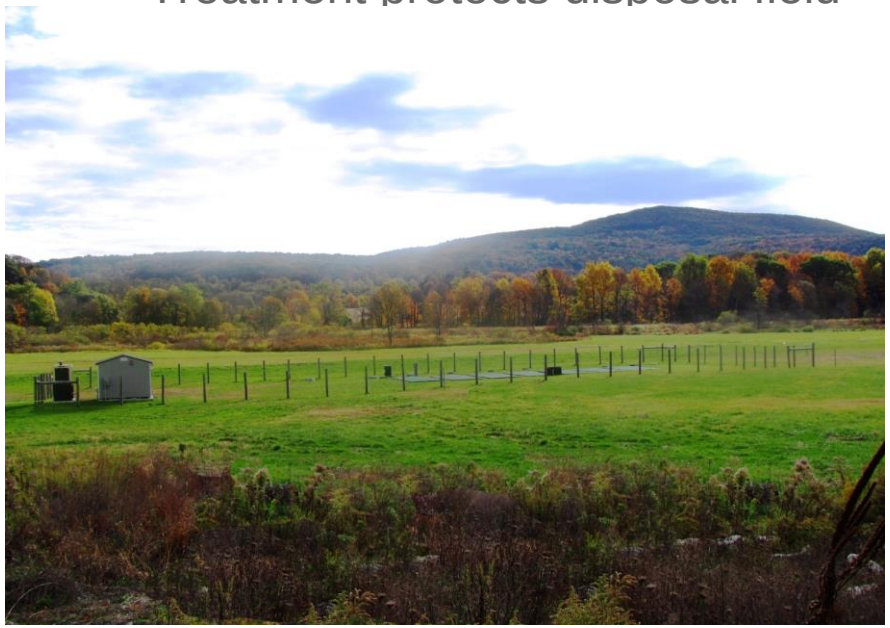
TASK 3: COLLECTION & TREATMENT SYSTEM LAYOUT

- **Treatment & Disposal**



TASK 3: COLLECTION & TREATMENT SYSTEM LAYOUT

- **Why this system**
  - Low visual impact, works with community goals, aesthetics
  - Simple operation & maintenance
  - Subsurface disposal lower cost to build and operate
  - Treatment = smaller disposal field limiting disturbance
  - Treatment protects disposal field



Task 1: Sewer District Needs Analysis & Delineation → Task 2: Wastewater Flow Development → **Task 3: Collection & Treatment System Layout** → Task 4: Reports & OPC

TASK 3: COLLECTION & TREATMENT SYSTEM LAYOUT

- **Site Advantages & Challenges**
  - Close to hamlet center ✓
  - Fast percolation rate (1-2 minutes) ✓
  - Allows for gravity collection system ✓
  - High seasonal groundwater (30”-36” below grade) ✗
  - Parcel not owned by Town ✗

Task 1: Sewer District Needs Analysis & Delineation → Task 2: Wastewater Flow Development → **Task 3: Collection & Treatment System Layout** → Task 4: Reports & OPC

TASK 4: REPORTS & OPC

- **Project Costs**

Component	
Construction Costs[1]	$2,615,000
Engineering Costs[1]	$520,000
Land Acquisition	$171,000
Project Contingency (30%)[1]	$786,000
Financing Insurance Costs	$122,000
Total Project Cost Including Financing	**$4,214,000**

[1]Includes an escalation of 2.67% per year

- **Debt Service & Operation & Maintenance**

Item	
Annual Debt Service	$140,467
Annual O&M Cost	$65,000
Total Annual Cost	**$205,467**

TASK 4: REPORTS & OPC

- **User Costs**
  - EPA = < 2% Median Household Income = Affordable
  - Single Family House < $1,158 annually to be affordable
  - NYS Comptroller < $696 annually plus hook-up fees = Affordable
- **Potential Billing Method**
  - Single Family Annual Cost: $1,100
  - Small Commercial Annual Cost: $3,011
  - Simple Math: $205,500 / 32 parcels = $6,420 per year
- **How Do We Make This Affordable?**

TASK 4: REPORTS & OPC

- **Funding Strategies/Opportunities**
  - Assumes hardship financing but no grants
  - Grants help lower cost impact
    - USDA Rural Development Program (RD)
    - Clean Water State Revolving Fund (CWSRF)
    - Water Infrastructure Improvement Act (WIIA)
    - Dutchess County Community Development
    - Proposed Infrastructure Act
  - Applied for EFC WQIP Grant in July 2021
- **Methods to Lower Costs**
  - Negotiate on site fill – 2-foot extra soil is costly and adds grading to site ($100,000+)
  - Additional users

NEW YORK STATE

Environmental Facilities Corporation

DUTCHESS COUNTY SEAL

USDA Rural Development

STAKEHOLDER ENGAGEMENT

- **Who are stakeholders?**
  - Property owners within proposed service district
- **Stakeholder Outreach**
  - Presented report findings to Stakeholders on April 12, 2021
  - Substantial level of support among potential district parcel owners
- **Stakeholder Feedback**
  - Coordination needed with Church Parcel owners regarding potential development
  - Potential impact of nearby development on business district noted

NEXT STEPS

- **Use Report to Apply for Funding**
  - EFC WQIP applied for
  - Cannot apply for WIIA this round as district is not yet formed
- **Form District**
  - Map, Plan & Report document
  - May require vote from those in the district
  - If district formation starts now, estimated to be complete April 2022
- **Design and Construction of System**
  - Estimate system operational in 2024

EXAMPLE FROM HILLSDALE

From the Town Website…

Hillsdale Since 2000

A series of Town-led initiatives in the years after 2000 have helped Hillsdale experience something of a revival – a revival that continues to expand and reshape the Town. For example, after decades of concern, Hillsdale leveraged grants to fund the development of a Hamlet Sewer District. Years in the making, the result was a twenty-first century, much admired infrastructure that has enabled new businesses to launch and continues to attract new residents and businesses to the Hamlet.

HILLSDALE BEFORE AND AFTER

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QUESTIONS & DISCUSSION